# DENTAL MEDICINE Management of Dental Trauma - Avulsion: A Case Report

# Introduction

Dental trauma is common – about 30% of children have experienced a form of dental trauma by age 14, and it accounts for 5% of all injuries. Permanent tooth injuries may have serious functional, esthetic and psychological consequences affecting the patient's quality of life. Accurate diagnosis, timely treatment and appropriate follow-up based on the trauma guideline are key to improve the prognosis. This case report outlines the dental rehabilitation of a 11-year-old following a fall from an electric scooter resulting in a traumatic permanent tooth avulsion and luxation – from the initial encounter in the emergency department of University Medical Center to the subsequent follow up appointments. The report will include clinical and radiological findings associated with avulsion and luxation, and treatment rendered to the patient.

# **Trauma Guidelines**

### A. Obtain Information Regarding Mechanism of Injury

A through history taking of the incident helps with obtaining information about other possible injuries including serious head and neck injuries. If a patient reports dizziness, vomiting, delirium, or amnesia of the traumatic event, there should be a medical consult prior to any dental treatment. Conducting a cranial nerve exam may also be required.

### **B.** Obtain Medical and Dental History

Before treating any patient, it is imperative we obtain a medical and dental history to avoid any further complications.

### C. Avulsion Guidelines for A Permanent Tooth with A Closed Apex, extraoral dry time longer than 60 minutes

Remove debris and visible contamination. Administer local anesthesia, preferably without vasoconstrictor. Irrigate the socket with sterile saline and examine the alveolar socket. Remove coagulum if necessary. Replant the tooth slowly with slight digital pressure. Verify the correct position of the replanted tooth both clinically and radiographically. Stabilize the tooth for 2 weeks using a passive flexible wire of a diameter up to 0.015" or 0.4mm. Root canal treatment should be carried out within 2 weeks. Administer systemic antibiotics. Check tetanus status. Provide post-operative instructions and follow up at 2 weeks (splint removed), 1, 2, 3, 6 months, one year, and yearly thereafter for at least five years.

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### Case Report

### Patient Background

**Patient:** 11-year-old male presents to UMC emergency room Chief Concern: I fell from an electric scooter and my teeth feel loose Medical Conditions: none Medications: none Allergies: none **Birth:** full term, no issues Extraoral Evaluation (see Figure 1): Upper and lower lip lacerations with mild swelling Intraoral Evaluation (see Figure 2): #7 crown fracture no mobility, #8 crown fracture no mobility, #9 avulsed and replanted by a medical student, #10 crown fracture with mobility. Facial gingival margins of teeth 7, 8, 9, and 10 bleeding Radiographic Evaluation (see Figure 3): PA reveals fracture of teeth #7, 8 and 10, and reimplanted #9 with closed apex. #10 luxated.

# **Dental Management**

At UMC emergency room, #9 was repositioned and confirmed radiographically and clinically. Passive splint was placed (see Figure 4 and 5). Dentin on #10 was covered with Lime-Lite<sup>™</sup> Enhanced (Watertown, MA) to protect the pulp vitality. Patient came to UNLV pediatric dental clinic the following week to start endodontic treatment of #9. Splint was removed at 4 weeks as teeth were still not stable at 2-week check-up. #7 and #8 tested non-vital to EPT while #10 tested vital to EPT. Endodontic treatment were completed for teeth #7 and #8. Resin restorations were completed after (see Figure 6).

## Discussion

When patients experience trauma, it can be difficult for the patients and parents to fully understand the potential outcomes and post-operative home care. Therefore, it is crucial to strongly encourage the family to have timely follow up visits and provide appropriate dental managements.



### References

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